METRICS: A QUICK INTRODUCTION

TUESDAY, OCTOBER 20, 2015
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WHY METRICS?

• QUANTIFIABLE MEASURES OF RESEARCH IMPACT
• DIFFERENTIATE ARTICLES, JOURNALS, AUTHORS, INSTITUTIONS
• IMPERFECT CALCULATIONS OF A FUZZY CONCEPT
HOW ARE METRICS USED?

• EVALUATE RESEARCHERS:
  • HIRING
  • TENURE/PROMOTION
  • MERIT AWARDS
  • GRANT FUNDING

• BENCHMARK PROGRAMS AND INSTITUTIONS
WHAT ARE METRICS

• TRADITIONAL BIBLIOMETRICS
  • BASED ON CITATION COUNTS

• EMERGING ALTMETRICS
  • BASED ON ONLINE TOOLS
TRADITIONAL BIBLIOMETRICS FOR JOURNALS

- IN THE BEGINNING .. THERE WAS IMPACT FACTOR
- CREATED IN 1950S AS A TOOL FOR LIBRARIANS
- OWNED BY THOMSON REUTERS, PUBLISHED IN JOURNAL CITATION REPORTS
### IMPACT FACTOR IN CONTEXT

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IMPACT FACTOR ALTERNATIVES

- SJR
  - BASED ON SCOPUS DATA
  - CREATED BY INDEPENDENT RESEARCH GROUP, SCIMAGO
  - FREELY AVAILABLE ON SCIMAGOJR.COM

- H5-INDEX
  - CREATED BY GOOGLE SCHOLAR
  - ALSO FREE THROUGH GOOGLE SCHOLAR METRICS
## SJR AND H5-INDEX CATEGORIES

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<td>10. Political Analysis</td>
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AUTHOR METRIC

- H-INDEX

- AVAILABLE THROUGH WEB OF SCIENCE, SCOPUS, AND GOOGLE SCHOLAR

- ‘TRUE’ H-INDEX MAY REQUIRE MORE EFFORT
MAJOR CRITICISMS WITH BIBLIOMETRICS

• Citations may not measure positive impact
• Citations bias for certain types of articles
• Disciplinary applications
• Citations based on database of indexed journals
• Subject categories often too broad
• Major decisions based on limited data points

IS CITATION ANALYSIS A LEGITIMATE EVALUATION TOOL? *

E. Garfield

Institute for Scientific Information® (ISI®), 325 Chestnut Street, Philadelphia, PA 19106 (USA)
ENTER ALTMETRICS
WHAT ARE ALTMETRICS?

• DEFINITION: THE CREATION AND STUDY OF NEW METRICS BASED ON THE SOCIAL WEB FOR ANALYZING AND INFORMING SCHOLARSHIP.

ALTMETRICS.ORG

• MY DEFINITION: THE UMBRELLA CLASSIFICATION OF NON-CITATION BASED METRICS.
WHERE DO ALTMETRICS COME FROM?
HOW DO WE COLLECT ALTMETRICS?

- DIRECTLY FROM THE INDIVIDUAL TOOLS
- FROM PUBLISHERS (VIEWS, DOWNLOAD DATA)
- FROM (SOME) LIBRARY DATABASES
- FROM SCHOLARLY NETWORKS
- THROUGH AGGREGATING TOOLS
HOW DO WE CATEGORIZE ALTMETRICS?

• NO STANDARD CATEGORIES

• ONE TOOL’S CATEGORIES:
  • VIEWED
  • CITED
  • DISCUSSED
  • SAVED
  • RECOMMENDED

• ANOTHER TOOL SEPARATES PUBLIC AND SCHOLARLY ENGAGEMENT
MAJOR ALTMETRICS TOOLS

• ALL GATHER METRICS AND PROVIDE CONTEXT FOR RAW DATA

• ALTMETRIC
  • BADGE/DONUT
  • EXPLORER
  • FOR INSTITUTIONS

• IMPACTSTORY
  • SUBSCRIPTION FOR AUTHORS
  • ONLINE CV SUPPLEMENT

• PLUMX
  • INSTITUTIONAL SUBSCRIPTION
The Altmetric score is one measure of the quality and quantity of online attention that this article has received. You can read about how Altmetric scores are calculated here.

This article scored 243.36
The context below was calculated when this article was last mentioned on 28th May 2014

Compared to all articles in Nature

So far Altmetric has tracked 27,727 articles from this journal. They typically receive a lot more attention than average, with a mean score of 43.7 vs the global average of 5.0. This article has done particularly well, scoring higher than 96% of its peers.

All articles of a similar age

Older articles will score higher simply because they’ve had more time to accumulate mentions. To account for age we can compare this score to the 276,133 tracked articles that were published within six weeks on either side of this one in any journal. This article has done particularly well, scoring higher than 99% of its contemporaries.

Other articles of a similar age in Nature

We’re also able to compare this article to 961 articles from the same journal and published within six weeks on either side of this one. This article has done very well, scoring higher than 93% of its contemporaries.
University of Pittsburgh

The University of Pittsburgh's PlumX dashboard displays the research impact of researchers from a cross-section of departments throughout the university. Any contribution to the D-Scholarship Institutional Repository is available in PlumX. These contributions enable the per-institute and per-department views. Additionally, metrics about the impact of articles in library-published journals are also available.

Artifact Summary

Correction: A New Large-Bodied Oviraptorosaurian Theropod Dinosaur from the Latest Cretaceous of Western North America.

Citation data: PLoS one, ISSN: 1932-6203, Vol: 10, Issue: 4, Page: e0125843
Publication Year: 2015

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SOME BENEFITS OF ALTMETRICS

• NEW, COMPLEMENTARY WAYS TO ASSESS/MEASURE

• METRICS FOR RECENT PUBLICATIONS

• MEASURE OF PUBLIC ENGAGEMENT

• ASSESSMENT OF DIFFERENT TYPES OF SCHOLARSHIP
SOME LIMITATIONS OF ALTMETRICS

• IS THIS IMPACT? IS IT ATTENTION, ENGAGEMENT, OR SOMETHING ELSE?

• HOW DO WE AVOID ‘GAMING’?

• DISCIPLINARY DIFFERENCES IN ONLINE USE/ENGAGEMENT

• SOURCES NEED TO BE TRACKED CONSISTENTLY
WHAT’S HAPPENING NOW IN ALTMETRICS

• NISO ALTMETRICS WORKING GROUPS

• ALTMETRICS RESEARCH

• CURRENT USAGE
NISO WORKING GROUPS

• DEFINITION AND CASE USES
  • RESEARCH ASSESSMENT
  • SHOWCASE ACHIEVEMENTS
  • DISCOVERY

• DATA STANDARDIZATION

• METHODOLOGY STANDARDIZATION
ALTMETRICS RESEARCH

- DISCIPLINARY DIFFERENCES
- CORRELATIONS BETWEEN METRICS CATEGORIES AND CITATIONS
CURRENT USAGE

• NIH ‘BROADER IMPACT’ REQUEST FOR GRANT FUNDERS
• PROMOTION, TENURE
• SELF-DISCOVERY OF SOCIAL/SOCIETAL IMPACT
THANK YOU!

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